

**Claims:**

1. A currency authenticator having a plurality of sensitivity settings comprising:

2 a first characteristic detector retrieving first characteristic information from a

4 bill to be authenticated and generating an output signal;

6 means for selecting one of a plurality of sensitivity settings;

8 means for storing reference information associated with each of said

10 sensitivity settings; and

12 means for comparing said output signal to said reference information

14 associated with the one of said plurality of sensitivity settings selected by said means for selecting; said means for comparing indicating that said bill is counterfeit if said output signal does not satisfactorily compare with said reference information;

16 wherein said means for storing reference information stores reference

18 information for a plurality of denominations of bills and wherein said means for

20 storing stores reference information associated with each of said sensitivity settings

22 for each of said plurality of denominations.

2. The currency authenticator of claim 1 wherein said reference

2 information comprises a threshold value associated with each of said sensitivity settings for each of said plurality of denominations.

3. The currency authenticator of claim 1 further comprising means for

2 permitting an operator of the authenticator to assign a sensitivity setting to each of  
3 said plurality of denominations and means for the operator of the authenticator to  
4 indicate the denomination of the bill to be authenticated, wherein said means for  
5 selecting selects said one of said plurality of sensitivity settings to be the sensitivity  
6 setting assigned to the indicated denomination.

4. The currency authenticator of claim 1 further comprising means for

2 permitting an operator of the authenticator to assign a sensitivity setting to each of  
said plurality of denominations and means for determining the denomination of said  
4 bill to be authenticated and wherein said means for selecting selects said one of said

plurality of sensitivity settings to be the sensitivity setting assigned to the determined  
6 denomination of said bill.

4. The currency authenticator of claim 1 wherein each of said plurality of  
2 denominations has a sensitivity setting is assigned thereto and further comprising  
means for the operator of the authenticator to indicate the denomination of the bill to  
4 be authenticated, wherein said means for selecting selects said one of said plurality of  
sensitivity settings to be the sensitivity setting assigned to the indicated denomination.

6. The currency authenticator of claim 1 wherein each of said plurality of  
2 denominations has a sensitivity setting is assigned thereto and further comprising  
means for determining the denomination of said bill to be authenticated and wherein  
4 said means for selecting selects said one of said plurality of sensitivity settings to be  
the sensitivity setting assigned to the determined denomination of said bill.

5. The currency authenticator of claim 1 wherein said plurality of  
2 sensitivity settings comprise a high sensitivity setting and a low sensitivity setting.

6. The currency authenticator of claim 1 wherein said reference  
2 information associated with each of said sensitivity settings comprise a threshold  
value associated with each of said sensitivity settings and wherein said means for  
4 comparing indicates that said bill is counterfeit if said output signal fails to satisfy a  
predetermined relationship relative to said threshold value associated with the one of  
6 said plurality of sensitivity settings selected by said means for selecting.

7. The currency authenticator of claim 8 wherein said plurality of  
2 sensitivity settings comprise a high sensitivity setting and a low sensitivity setting and  
wherein said means for storing stores a high reference value and a low reference  
4 value, said high reference value being closer to a value of an output signal expected to  
be generated from a genuine bill than said low reference value.

8

10. The currency authenticator of claim 1 wherein said means for selecting 2 one of said plurality of sensitivity settings permits the operator of said authenticator to select said one of said plurality of sensitivity settings.

11. The currency authenticator of claim 1 further comprising means for 2 determining the denomination of said bill to be authenticated and wherein said means for selecting one of said plurality of sensitivity settings selects said one of said 4 plurality of sensitivity settings based on the determined denomination of said bill.

12. The currency authenticator of claim 11 wherein said means for 2 selecting one of said plurality of sensitivity settings selects a lower sensitivity setting when said bill is determined to be of a lower denomination and a higher sensitivity 4 setting when said bill is determined to be of a higher denomination.

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13. The currency authenticator of claim 1 further comprising means for 2 assigning a sensitivity setting to each of a plurality of denominations.

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14. The currency authenticator of claim 13 wherein said means for 2 assigning a sensitivity setting to each of said plurality of denominations permits an operator of the authenticator to assign a sensitivity setting to each of said plurality of 4 denominations.

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15. The currency authenticator of claim 1 wherein each of a plurality of 2 denominations has a sensitivity setting assigned thereto.

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16. A currency authenticator having a plurality of sensitivity settings comprising:

4 one or more detectors for retrieving a plurality of types of characteristic information from a bill to be authenticated and generating a respective output signal associated with each type of characteristic information;

6 means for selecting, for each type of characteristic information, one of a plurality of sensitivity settings;

8 means for storing, for each type of characteristic information, reference information associated with each of said sensitivity settings;

10 means for comparing, for each type of characteristic information, said respective output signal to corresponding reference information associated with the

12 one of said plurality of sensitivity settings selected by said means for selecting for said type of characteristic information; said means for comparing indicating that said

14 bill is counterfeit if one or more of said output signals do not satisfactorily compare with said reference information.

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~~16~~ The currency authenticator of claim ~~16~~ wherein said plurality of types of characteristic information comprise magnetic information, reflected ultraviolet light information, and fluorescent light information.

*16*

2 18. A currency authenticator having a plurality of sensitivity settings comprising:

4 a first characteristic detector retrieving first characteristic information from a bill to be authenticated and generating an output signal;

6 means for determining the denomination of said bill to be authenticated;

8 means for selecting one of a plurality of sensitivity settings, said means for selecting one of said plurality of sensitivity settings selecting said one of said plurality of sensitivity settings based on the determined denomination of said bill;

10 means for storing reference information associated with each of said sensitivity settings;

12 means for comparing said output signal to said reference information associated with the one of said plurality of sensitivity settings selected by said means for selecting; said means for comparing indicating that said bill is counterfeit if said

14 output signal does not satisfactorily compare with said reference information.

19. The currency authenticator of claim 18 wherein said means for selecting one of said plurality of sensitivity settings selects a lower sensitivity setting

when said bill is determined to be of a lower denomination and a higher sensitivity setting when said bill is determined to be of a higher denomination.

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20. A currency authenticator having a plurality of sensitivity settings comprising:  
2 a first characteristic detector retrieving first characteristic information from a  
4 bill to be authenticated and generating an output signal;  
6 means for selecting one of a plurality of sensitivity settings;  
8 means for assigning one of said plurality of sensitivity settings to each of a plurality of denominations;  
10 means for storing reference information associated with each of said sensitivity settings;  
12 means for comparing said output signal to said reference information associated with the one of said plurality of sensitivity settings selected by said means for selecting; said means for comparing indicating that said bill is counterfeit if said output signal does not satisfactorily compare with said reference information.

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21. The currency authenticator of claim 20 wherein said means for assigning a sensitivity setting to each of said plurality of denominations permits an operator of the authenticator to assign a sensitivity setting to each of said plurality of denominations.

22. The currency authenticator of claim 21 further comprising means for the operator of the authenticator to indicate the denomination of the bill to be authenticated and wherein said means for selecting selects said one of said plurality of sensitivity settings to be the sensitivity setting assigned to the indicated denomination.

23. The currency authenticator of claim 21 further comprising means for determining the denomination of said bill to be authenticated and wherein said means for selecting selects said one of said plurality of sensitivity settings to be the sensitivity setting assigned to the determined denomination of said bill.

24. A currency handling device having a plurality of sensitivity settings comprising:  
 2 a first characteristic detector retrieving first characteristic information from a  
 4 bill and generating an output signal;  
 6 means for selecting one of a plurality of sensitivity settings;  
 8 means for storing reference information associated with each of said  
 10 sensitivity settings, said means for storing reference information storing reference  
 12 information for a plurality of denominations of bills for each of said plurality of  
 14 sensitivity settings; and  
 16 means for comparing said output signal to said reference information  
 18 associated with the one of said plurality of sensitivity settings selected by said means  
 20 for selecting; said means for comparing indicating an error if said output signal does  
 22 not satisfactorily compare with said reference information.

25. The currency device of claim 24 wherein said reference information  
 2 comprises a threshold value associated with each of said sensitivity settings for each  
 4 of said plurality of denominations.

26. The currency device of claim 24 wherein said means for selecting one  
 2 of said plurality of sensitivity settings permits the operator of said device to select said  
 4 one of said plurality of sensitivity settings.

27. The currency device of claim 24 further comprising means for  
 2 determining the denomination of said bill and wherein said means for selecting one of  
 4 said plurality of sensitivity settings selects said one of said plurality of sensitivity  
 6 settings based on the determined denomination of said bill.

28. The currency device of claim 27 wherein said means for selecting one  
 2 of said plurality of sensitivity settings selects a lower sensitivity setting when said bill  
 4 is determined to be of a lower denomination and a higher sensitivity setting when said  
 6 bill is determined to be of a higher denomination.

29. The currency device of claim 24 further comprising means for  
2 assigning a sensitivity setting to each of a plurality of denominations.

30. The currency device of claim 29 wherein said means for assigning a  
2 sensitivity setting to each of said plurality of denominations permits an operator of the  
device to assign a sensitivity setting to each of said plurality of denominations.

*Substantially the same as claim 24*  
31. The currency device of claim 30 further comprising means for the  
2 operator of the device to indicate the denomination of the bill and wherein said means  
for selecting selects said one of said plurality of sensitivity settings to be the  
4 sensitivity setting assigned to the indicated denomination.

32. The currency device of claim 30 further comprising means for  
2 determining the denomination of said bill and wherein said means for selecting selects  
said one of said plurality of sensitivity settings to be the sensitivity setting assigned to  
4 the determined denomination of said bill.

33. The currency device of claim 24 wherein each of a plurality of  
2 denominations has a sensitivity setting is assigned thereto.

*25* *20*  
34. The currency device of claim *24* wherein each of said plurality of  
2 denominations has a sensitivity setting is assigned thereto and further comprising  
means for the operator of the device to indicate the denomination of said bill, wherein  
4 said means for selecting selects said one of said plurality of sensitivity settings to be  
the sensitivity setting assigned to the indicated denomination.

35. The currency device of claim 24 wherein each of said plurality of  
2 denominations has a sensitivity setting is assigned thereto and further comprising  
means for determining the denomination of said bill and wherein said means for  
4 selecting selects said one of said plurality of sensitivity settings to be the sensitivity  
setting assigned to the determined denomination of said bill.

36. A device for authenticating documents comprising:  
2 an ultraviolet light source for illuminating a document to be tested;  
4 an ultraviolet light detector for generating an output signal responsive to  
ultraviolet light reflected by said document;  
6 a signal processor for receiving said ultraviolet detector output signal and  
determining the authenticity of said document based upon said output signal; said  
signal processor determining the authenticity of by comparing said output signal to  
8 one of a plurality of reference signals; said plurality of reference signals being  
associated with various sensitivity settings; and  
10 means for selecting said one of a plurality of reference signals.

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